

**THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Appellant(s): Marke, et al.  
Appl. No.: 10/523,326  
Conf. No.: 5780  
Filed: 2/1/2005  
Title: EVALUATION OF RECEIVED USEFUL INFORMATION BY THE  
DETECTION OF ERROR CONCEALMENT  
Art Unit: 2626  
Examiner: Colucci, Michael C.  
Docket No.: 119065-23

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPELLANTS' APPEAL BRIEF**

Sir:

Appellants submit this Appeal Brief in support of the Notice of Appeal filed on June 20, 2008. This Appeal is taken from the Final Rejection in the Office Action dated March 20, 2008.

### **I. REAL PARTIES IN INTEREST**

The real parties in interest for the above-identified patent application on Appeal is Palm, Inc., by virtue of an Assignment recorded on September 28, 2007 at reel 019897, frame 0912 in the United States Patent and Trademark Office.

## **II. RELATED APPEALS AND INTERFERENCES**

Appellant's legal representative and the Assignees of the this patent application do not know of any prior or pending appeals, interferences or judicial proceedings that may be related to, directly affect or be directly affected by or have a bearing on the Board's decision with respect to the above-identified Appeal.

### **III. STATUS OF CLAIMS**

Claims 14-25 are pending in this application. Claims 1-13 were previously canceled. Claims 14-25 stand rejected. Therefore, Claims 14-25 are being appealed in this Brief. A copy of the appealed claims is included in the Claims Appendix.

#### **IV. STATUS OF AMENDMENTS**

A preliminary Amendment was filed on February 1, 2005. A non-final Office Action was mailed on September 24, 2007 rejecting the claims as obvious in view of several cited references. Appellants responded to the non-final Office Action on January 24, 2008 and amended the claims to overcome the obvious rejection set forth in the non-final Office Action. A final Office Action maintaining the rejections was mailed on March 20, 2008. Appellants filed a Notice of Appeal on June 20, 2008. A copy of the non-final Office Action and final Office Action are attached as Exhibits A and B, respectively, in the Evidence Appendix.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

A summary of the claimed subject matter by way of reference to the specification and/or figures for each of the independent claims is provided as follows:

Independent Claim 1 is directed to a method for evaluating data containing useful information received via a communication network (§ 5), the method comprising: evaluating and at least partially correcting, via a channel decoder, the data received (§ 8; Element 1 of FIG. 1), forwarding, via the channel decoder, to a speech decoder the data with characteristics of supplementary information representing the data (§ 8; Element 2 of FIG. 1); decoding the data via the speech decoder and, where necessary, performing error concealment (§ 8; FIG. 1); forwarding the data to a text telephony receiver via the speech decoder (§§ 10-11; Element 5 of FIG. 1); determining if the error concealment was performed by evaluating the data received and analyzing the data statistically, via a demodulator in the text telephony receiver (§§ 9-10; Element 3 of FIG. 1); generating, via the demodulator, reliability information relating to the data received, the reliability information being indicative of whether the error concealment was performed (§ 9; §10, § 12; Element 3 of FIG. 1); forwarding the data, via the demodulator, with the reliability information to an error correction modulator (§ 10; “2 bits/slot” line between element 3 and element 4 of FIG. 1); and correcting the data received, via the error correction modulator, taking into account the reliability information (§ 12; Element 4 of FIG. 1).

Independent Claim 25 is directed to a device for evaluating data containing useful information received via a communication network (§ 5), comprising: a channel decoder in a communication terminal receiver for evaluating and at least partially correcting the received data, and for forwarding the data with characteristics of supplementary information representing the data to a speech decoder (§ 8; Elements 1 and 2 of FIG. 1); a speech decoder for decoding and, if necessary, performing error concealment, and for forwarding the data to a text telephony receiver (§ 8; Element 2 of FIG. 1); a demodulator in the text telephony receiver for determining if the error concealment was performed by evaluating and statistically analyzing the received data by measuring a signal energy, for creating reliability information relating to the data, the reliability information being indicative of whether the error concealment was performed, and for forwarding the data with the reliability information to an error correction modulator (§ 9; §10, §

12; Element 3 of FIG. 1); and an error correction modulator for correcting the received data, taking into account the reliability information (§ 12; Element 4 of FIG. 1).

Although specification citations are given in accordance with 37 C.F.R. §1.192(c), these reference numerals and citations are merely examples of support in the specification for the terms used in this section of the Brief. There is no intention to suggest in any way that the terms of the claims are limited to the examples in the specification. As demonstrated by the references numerals and citations, the claims are fully supported by the specification as required by law. However, it is improper under the law to read limitations from the specification into the claims. Pointing out specification support for the claim terminology in accordance with Rule 1.192(c) does not in any way limit the scope of the claims to those examples from which they find support. Nor does this exercise provide a mechanism for circumventing the law precluding reading limitations into the claims from the specification. In short, the references numerals and specification citations are not to be construed as claim limitations or in any way used to limit the scope of the claims.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Claims 14 and 25 stand rejected under 35 U.S.C. § 112 ¶1 for failing to comply with the written description requirement.
2. Claims 14-16 and 18-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,968,309 to Makinen et al. ("*Makinen*") in view of U.S. Patent No. 6,721,707 to Chu et al. ("*Chu*"). Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Makinen* in view of *Chu* and further in view of U.S. Patent No. 6,366,578 to Johnson ("*Johnson*"). Copies of *Makinen*, *Chu* and *Johnson* are attached hereto as Exhibits C, D and E, respectively, in the Evidence Appendix.



## VII. ARGUMENT

### A. LEGAL STANDARDS

#### 1. Written Description under 35 U.S.C. §112, ¶1

The specification of a patent application must properly describe the invention as claimed so as to be understood by a person of ordinary skill in the art. *Wang Labs, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993). In other words, the specification of the patent application must be convey to a person of ordinary skill in the art that the inventor made the invention as claimed. *In re Spina*, 975 F.2d 854, 24 USPQ2d 1142 (Fed. Cir. 1992).

#### 2. Obviousness under 35 U.S.C. §103

The Federal Circuit has held that the legal basis for a determination of obviousness under 35 U.S.C. § 103 is:

whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made...The foundational facts for the prima facie case of obviousness are: (1) the scope and content of the prior art; (2) the difference between the prior art and the claimed invention; and (3) the level of ordinary skill in the art...Moreover, objective indicia such as commercial success and long felt need are relevant to the determination of obviousness...Thus, each obviousness determination rests on its own facts.

*In re Mayne*, 41 U.S.P.Q. 2d 1451, 1453 (Fed. Cir. 1997).

In making this determination, the Examiner has the initial burden of proving a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q. 2d 1955, 1956 (Fed. Cir. 1993). This burden may only be overcome “by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings.” *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). “If the examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent.” *In re Oetiker*, 24 U.S.P.Q. 2d 1443, 1444 (Fed. Cir. 1992).

Moreover, the Examiner must provide explicit reasons why the claimed invention is obvious in view of the prior art. The Supreme Court has emphasized that when formulating a

rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. *KSR v. Teleflex*, 127 S. Ct. 1727 (2007).

Of course, references must be considered as a whole and those portions teaching against or away from the claimed invention must be considered. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve Inc.*, 796 F.2d 443 (Fed. Cir. 1986). “A prior art reference may be considered to teach away when a person of ordinary skill, upon reading the reference would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the Applicant.” *Monarch Knitting Mach. Corp. v. Fukuhara Indus. Trading Co., Ltd.*, 139 F.3d 1009 (Fed. Cir. 1998) (quoting *In re Gurley*, 27 F.3d 551 (Fed. Cir. 1994)).

B. THE CLAIMED INVENTION

There are two independent claims on appeal: Claims 14 and 25. Independent Claim 14 is generally directed to a method for evaluating data containing useful information received via a communication network. Independent Claim 25 is generally directed to a device for evaluating data containing useful information received via a communication network.

14-16 and 18-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,968,309 to Makinen et al. (“*Makinen*”) in view of U.S. Patent No. 6,721,707 to Chu et al. (“*Chu*”). Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Makinen* in view of *Chu* and further in view of U.S. Patent No. 6,366,578 to Johnson (“*Johnson*”).

C. THE REJECTION OF CLAIMS 14 AND 25 UNDER 35 U.S.C. §112, ¶1 SHOULD BE REVERSED BECAUSE THE SPECIFICATION MEETS THE WRITTEN DESCRIPTION REQUIREMENT

Independent claims 14 and 25 recite “determining if the error concealment was performed” and “reliability information being indicative of whether the error concealment was

performed.” These limitations are clearly supported by the specification. For example, the specification states (emphasis added):

[0009] The source-decoded audio signal is investigated for characteristic features of error concealment which allow it to be concluded upon decoding in the time window investigated that there is a sufficiently great likelihood of error concealment having been used. The information thus obtained as to whether error concealment is likely to be present is included in reliability information specifying the reliability of correct demodulation of the useful information which the demodulator (3) of the data containing useful information supplies. If it is likely that error concealment has been used for useful information in the demodulation time window, the reliability (= likelihood), of the useful information having been appropriately (= correctly) decoded, that is of it corresponding to the transmitted useful information, falls. The reliability information is thus defined as a lower value than if no use of error concealment had been detected.

A subsequent channel decoding of the data containing useful information can better identify and correct errors with this reliability information. Useful information may consist of numbers, letters or numbers and letters, for example. The CTM receiver (5) includes a demodulator unit (3) and the error correction module (4). Initially, two bits which are contained frequency-modulated in the PCM signal are generated from 40 PCM signal values. Reliability information is added to the bits. The reliability information is incorrectly high if the 40 signal values come from an AMR which was actually received as unusable. The error concealment refers to the signal having few acoustic noise components, but has taken the frequency-modulated information from a speech frame of the past and thus cannot be utilized at the current point in time.

[0010] The information about whether error concealment was applied no longer can be taken directly from the PCM signal. At the CTM receiver (5), 2 bits frequency-modulated (4 frequencies) are transmitted every 5 ms. The frequency which is the most likely to have been transmitted is determined with a correlation demodulator (3). A CTM (Cellular Text telephone Modem) is a modem which makes it possible to transmit text messages over speech channels in mobile radio systems. Independently of the speech channel (Fullrate Speech, Halfrate Speech, Enhanced Fullrate Speech, AMR, future technologies), information can be transmitted by those with hearing or speech difficulties using encoded and frequency-modulated transmission of text in the voice frequency band.

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[0012] This information as well as the specifications relating to reliability is transferred to the channel decoder of the CTM system. The signal energy also may be measured. 5 ms corresponds to a quarter of an AMR frame of 20 ms. With error concealment in the AMR receiver (6), parameters from earlier correctly-received frames are repeated, wherein at a point in time t, a signal is output which is very similar to the signal at point t minus 20 ms but has lower signal energy (the gain factors are attenuated). The comparison between the frequency detected at point t and the signal energy with the detected frequency and signal energy at point t minus 20 ms thus enables the conclusion to be drawn, with the same frequency and lower signal energy at point t that it is quite likely that error concealment has been used and the reliability information of the CTM demodulator (3) can be changed so that it specifies a low reliability. The same procedure may be used if the same frequency is detected in directly consecutive 5 ms subframes and signal energy which remains the same or falls is measured,

since this is also a symptom for the application of error concealment in demodulation that has been undertaken. With AMR error concealments, parameters of the subframes are averaged and, thus, similar signals are output over 4 subframes. These two approaches and an optimally parameterized attenuation of the information enable the error rate for transmission of letters to be reduced by approximately 20 percent. The statistical investigations conducted in connection with the present invention allow estimation as to whether error concealment has been used. The reliability information then may be adapted, wherein for text/(CTM) data, it can be appropriately specified whether there is a high or low likelihood (= more or less reliable) that it has been appropriately demodulated, since this depends on the use of error concealment (unsuitable for text/(CTM) data) during demodulation. The data consists of the useful information for CTM still with the header and other information.

Error concealment is a technique used to mask unusable voice frames. For example, if frame one is usable, frame two is corrupted, and frame three is usable, error concealment will essentially average voice frame one and voice frame three to create a manufactured but usable voice frame two. This manufactured frame two may not be exactly the same as the lost frame two. However, the manufactured frame two sounds better than abrupt silence if the signal truly represents voice. If the signal is actually a data signal being modulated on a voice channel (e.g., a cellular text modem signal), then this error concealment is not desired and detecting it is helpful to decoding the non-voice (data) signal.

The above referenced portion of the specification teaches two different methods of determining if error concealment has likely been performed. In the first method, the incoming signal is sampled at time  $t-20$  ms and again at time  $t$  (i.e., 20 ms apart). If the frequency of the two samples is the same, and the energy decreased from time  $t-20$  ms to time  $t$ , then error concealment likely occurred. This method of detecting error concealment is summarized in the following chart.

Time = t-20 ms	Time = t
Freq = A	Freq = A
Energy = X	Energy = X - Y

In the second method described in the specification, the incoming signal is sampled at time t-5 ms and again at time t (i.e., 5 ms apart). If the frequency of the two samples is the same and the energy stayed the same or decreased from time t-5 ms to time t, then error concealment likely occurred. This method of detecting error concealment is summarized in the following chart.

Time = t-5 ms	Time = t
Freq = A	Freq = A
Energy = X	Energy = X or Energy = X - Y

Regardless of the method of detection used, the reliability information of the demodulator is changed so that it specifies a low reliability. Because the specification so clearly describes “determining if the error concealment was performed” and “reliability information being indicative of whether the error concealment was performed,” the rejection of claims 14 and 25 under 35 U.S.C. §112, ¶1 should be reversed.

D. THE REJECTION OF CLAIMS 14-25 UNDER 35 U.S.C. §103(A) SHOULD BE REVERSED BECAUSE THE EXAMINER HAS FAILED TO ESTABLISH A *PRIMA FACIE* CASE OF OBVIOUSNESS

1. *Makinen* and *Chu* alone or in combination fail to disclose or suggest the claimed invention

Independent Claim 14 recites, inter alia, “determining if the error concealment was performed by evaluating the data received and analyzing the data statistically” and “the reliability information being indicative of whether the error concealment was performed.” Similarly, independent claim 25 now recites, among other elements, “determining if the error

concealment was performed by evaluating and statistically analyzing the received data” and “the reliability information being indicative of whether the error concealment was performed.”

*Makinen* and *Chu*, alone and in combination, fail to teach the foregoing claimed elements for at least the following reasons. *Chu* makes no mention of “error concealment.” *Makinen* merely describes a method of performing “error concealment.” *Makinen* does not teach determining if the error concealment was performed by statistically analyzing received data as currently claimed. In addition, *Makinen* does not teach generating (or creating) reliability information indicative of whether the error concealment was performed as currently claimed.

By statistically determining if error concealment was performed (as opposed to simply being supplied with an on/off signal from a circuit that performed the error concealment), a backwards compatibility advantage is gained. As described by the specification:

A significant advantage of this method is that no explicit information of a receiver about the use of error concealment is needed, making it suitable for accessories as well. If this method is used for external CTM (Cellular Text telephone Modem) add-on devices, the CTM device functions without adaptation with different makes of mobile radio terminals. The present invention can be used to come to a reliable decision as to whether the received useful information has been corrupted by error concealment. Furthermore, the error rates during transmission can be minimized, which represents a major advantage, particularly for emergency calls. (Paragraph 0005; emphasis added)

Each of the other pending claims depends directly or indirectly from independent claim 14. Therefore, for the reasons provided above, Applicants submit that all of the pending claims are in condition for allowance.

For at least the reasons discussed above, *Makinen* and *Chu* alone or in combination fail to disclose or suggest every element of independent Claims 1 and 25. Accordingly, Appellants respectfully submit that Claims 1 and 25, as well as Claims 2-24 that depend from Claim 1 are novel, nonobvious and distinguishable from the cited references and are in condition for allowance.

2. The skilled artisan would not have arrive at the claimed invention in view of  
*Makinen* and *Chu*

The Examiner generally concludes that it would have been within the ordinary skill of the artisan at the time the claimed invention was made because the references relied upon allegedly teach that all aspects of the claimed invention were individually known in the art. However, this conclusory statement is not sufficient to establish a *prima facie* case of obviousness without some objective reason to utilize the teachings of the references to arrive at the invention. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). There must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness by the Examiner. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

The skilled artisan would not have arrived at the claimed invention using the cited references in the absence of hindsight. Moreover, *Makinen* and *Chu* fail to even recognize the advantages, benefits and/or properties of statistically determining if error concealment was performed in accordance with the present claims. Instead, Appellants respectfully submit that the Examiner is improperly using Appellants' patent application as a road map for creating hindsight obviousness. Accordingly, Appellants respectfully submit that Claims 14-25, are novel, nonobvious and distinguishable from the cited references and are in condition for allowance.




### VIII. CONCLUSION

Appellants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. §103 with respect to the rejection of Claims 14-25. Accordingly, Appellants respectfully submit that the obviousness rejection is erroneous in law and in fact and should therefore be reversed by this Board.

The Director is authorized to charge any fees that may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 119065-23 on the account statement.

Respectfully submitted,

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## **CLAIMS APPENDIX**

### **PENDING CLAIMS ON APPEAL OF U.S. PATENT APPLICATION SERIAL NO. 11/326,957**

14. A method for evaluating data containing useful information received via a communication network, the method comprising:

- evaluating and at least partially correcting, via a channel decoder, the data received;
- forwarding, via the channel decoder, to a speech decoder the data with characteristics of supplementary information representing the data;
- decoding the data via the speech decoder and, where necessary, performing error concealment;
- forwarding the data to a text telephony receiver via the speech decoder;
- determining if the error concealment was performed by evaluating the data received and analyzing the data statistically, via a demodulator in the text telephony receiver;
- generating, via the demodulator, reliability information relating to the data received, the reliability information being indicative of whether the error concealment was performed;
- forwarding the data, via the demodulator, with the reliability information to an error correction modulator; and
- correcting the data received, via the error correction modulator, taking into account the reliability information.

15. A method for evaluating data containing useful information as claimed in claim 14, further comprising determining a likelihood of the reliability information representing appropriate decoding of the data received as a function of a result of the error concealment.

16. A method for evaluating data containing useful information as claimed in claim 15, further comprising providing a channel decoder which takes account of the reliability information for channel decoding.

17. A method for evaluating data containing useful information as claimed in claim 14, wherein the data is emergency call-related data.

18. A method for evaluating data containing useful information as claimed in claim 14, wherein the data is analyzed in a mobile station.

19. A method for evaluating data containing useful information as claimed in claim 14, wherein the data is transmitted over a cellular mobile communication network.

20. A method for evaluating data containing useful information as claimed in claim 14, wherein for statistical detection of an error concealment by the speech decoder, time segments of frames of the received useful information are analyzed.

21. A method for evaluating data containing useful information as claimed in claim 20, wherein the time segments are analyzed in a text telephony demodulator.

22. A method for evaluating data containing useful information as claimed in claim 14, wherein the error correction modulator is located in the text telephony receiver.

23. A method for evaluating data containing useful information as claimed in claim 14, wherein the data is encoded with Adaptive Multi Rate.

24. A method for evaluating data containing useful information as claimed in claim 14, wherein the useful information includes at least one of text, speech, picture and video signals.

25. A device for evaluating data containing useful information received via a communication network, comprising:

a channel decoder in a communication terminal receiver for evaluating and at least partially correcting the received data, and for forwarding the data with characteristics of supplementary information representing the data to a speech decoder;

a speech decoder for decoding and, if necessary, performing error concealment, and for forwarding the data to a text telephony receiver;

a demodulator in the text telephony receiver for determining if the error concealment was performed by evaluating and statistically analyzing the received data by measuring a signal energy, for creating reliability information relating to the data, the reliability information being indicative of whether the error concealment was performed, and for forwarding the data with the reliability information to an error correction modulator; and

an error correction modulator for correcting the received data, taking into account the reliability information.

## **EVIDENCE APPENDIX**

EXHIBIT A: Non-final Office Action dated September 24, 2007

EXHIBIT B: Final Office Action dated March 20, 2008

EXHIBIT C: U.S. Patent No. 6,968,309 to Makinen et al. ("*Makinen*")

EXHIBIT D: U.S. Patent No. 6,721,707 to Chu et al. ("*Chu*")

EXHIBIT E: U.S. Patent No. 6,366,578 to Johnson ("*Johnson*")

**RELATED PROCEEDINGS APPENDIX**

None